

# DOWNLOAD PDF INFORMATION TECHNOLOGY AS AN ENABLER OF PROCESS INNOVATION

## Chapter 1 : Process innovation | Open Library

*Technology is the new game changer, but it will not make the permanent process of enlightened leadership any easier. It all begins with enlightened leadership that is committed to continuous improvement as first and foremost, the only acceptable cultural standard of excellence, and a critical enabler of strategy execution and business success.*

Enabler or inhibitor of improvement? Many organizations have morphed themselves from geographically and country-specific sites into a global network of complex, knowledge-based transactional processes. Manufacturing, in which many process improvement techniques evolved, represents a declining percentage of developed countries economic activity. Sure, manufacturing is still part of the chain, but a very small component in terms of the fully loaded costs of doing business globally. Organizations have morphed The challenge of this transformation is that improvement practitioners are not able to use their normal senses to identify issues and new opportunities for improvement as they once could on the production floor when measuring yields, viewing excess inventory, listening to equipment vibration, detecting odor from poor ventilation systems, and the like. Personally, I have observed too many unsuccessful "after the fact" attempts to port over Lean manufacturing and other shop floor-based improvement tools to the transactional areas with little actual results. Some consulting firms have guided their clients through months of blind effort value stream mapping every process in the office with no purpose or specific problem in mind. I call this "Field of Dreams" improvement - if you follow the tool, the results will automatically come. The hard truth is that these naive efforts often lead to a dead end of "now what do we do? I walked into another organization that had "5S"ed everything in the office including the copy machine, personnel and financial file cabinets, the paper cutter, and believe it or not - all of the individual fixtures in the rest rooms. When executives finally see these types of results, the effort is quickly viewed as "non value-added" and therefore not necessary. But improvement is always necessary, and these false starts have demoralizing effects on people and teams that are sincerely interested in stepping up and becoming the champions of improvement in their organizations. In the transactional space, much more improvement creativity and innovation is needed than the traditional production approaches with its manual kanban cards, 5S exercises, symbolic signage and storyboards, and beautification exercises. Technology Clearly Enables Improvement Today, new opportunities for improvement are coming at us in near real time, and it is necessary to adapt the philosophy and approaches of continuous improvement to this new norm. Additionally, the largest opportunities are the ones that we do not know about yet. Technology is the enabler of identifying and harvesting these new improvement opportunities. A few of the larger enablers of continuous improvement include: A central repository of data and information which is created by integrating data from multiple disparate sources. Data warehousing improves data quality and integrity by offering a repository of information that represents a single version of the truth. This is a must when attempting to improve complex transactional processes. The ability to analyze process performance in real time and make the right evidence-based adjustments. Business analytics enables us to execute what was once completed in a project, in real time using a critical thinking process that we refer to as a SIDAM Sense, Interpret, Decide, Act, Monitor. Business analytics provides that "6th sense" needed for transactional process improvement because users and practitioners cannot sense problems before and during the point when they happen, i. Silly analogies, but very true in transactional process improvement. In the transactional space, most organizations learn about problems after the fact. This provides the ability to measure performance as it is occurring, almost like the stock market. Some of our clients have manufacturing work cells where assemblers complete their work, wand the product, and pass it on to the next associate in the cell. Productivity and quality are measured in real time at the cell and individual level. Another digital panel provides a Pareto analysis of problems experienced during prior builds and specific work instructions to prevent these unexpected defects. Other organizations view real time sales progress to the territory, region, and rep level; evaluate global supply vs. Well designed digital performance dashboards encourage real time

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engagement, empowerment, and self management. Virtualization, Mobility, Cloud Technology: This allows for the ultimate management by walking around. In traditional Lean thinking, there was a saying that we "go to the Gemba" go out and observe the workplace. In retrospect this is a limited idea. Technology has now placed the Gemba within our fingertips on our iPads and iPhones, on a laptop at a table at Starbucks, in a Go-To-Meeting session, in our automobiles. How about virtual meetings where participants can see each other but speak in their native language which is translated in real time for the rest members of the group. This is related to technology and deals with the emerging science of displaying data and information to convey ideas and conclusions effectively, both in terms of aesthetic form and functionality. This is an emerging science as practitioners and researchers create data visualizations that not only communicate information, but reduce measurement system error by engaging people in the right single interpretation of the results, and the right evidence-based corrective actions. There is a series of underlying assumptions that make these components true enablers of improvement. The most important factor is that an inseparable fusion of technology and improvement must exist in the implementation process. How are we doing? In other words, organizations cannot pursue these enablers in isolation of business process improvement without severe consequences. The improvement opportunities in these complex transactional processes are huge: Technology Can Become an Inhibitor There is no doubt that technology is evolving faster than organizations can assimilate it successfully. Unfortunately, technology is also pushing the immediacy and instant gratification factors of decision making. The future is all about the correct fusion of formal structured and deliberate improvement with enabling IT. This future includes how to get the most out of existing technology and integrated enterprise architectures, and assimilating emerging technologies such as business analytics, unshakable performance dashboards, cloud computing and virtualization, and other capabilities as a strategic weapon of global competitiveness. Technology is a huge game changer for improvement because it is transforming the traditional wave batch , project-based linear waterfall approaches of improvement activities of the past into living, real-time improvement. The historical problem with emerging technology is that it is usually viewed from too much of an IT perspective and not enough from a business integration and user development perspective. Currently there exists a huge missing link between the human talent development, and the technologies being marketed by the software community such as cloud computing, event driven performance dashboards, business analytics, and data visualization. A major consideration of technology-enabled improvement that must not be overlooked is that the real intelligence still lies in the improvement practitioner and the user community in the form of human intelligence. Transactional forensics is a very appropriate name for this approach: There is another emerging cultural challenge called the XBox and MTV generation who grew up on technology and uses it as a matter of fact. A closer look at these behaviors reveals that it is moving us more towards instant gratification and further away from critical root cause thinking and the social aspects of problem solving. Today, many people send a text or email - any time of the day or night - and expect an answer immediately. The window of critical thinking is shrinking - or maybe closing a bit. The new generation of workers are using technology in many cases as an end rather than a means or enabler to the end. This discussion is not intended to be a criticism of our upcoming generations but to point out a radical shift in how we are dealing with problems. What this demonstrates is an urgent need to integrate improvement and technology. The process of improvement still relies on human intelligence to define and segment the right root cause information, analyze data with the right methodologies and tools, draw the right, data-driven conclusions, take the right fact-based actions, close the loop with the right performance metrics, and continuously repeat this cycle. Organizations have talked a good game about integrating business process improvement and technology in the past. The sheer availability of never ending emerging technology and distribution models e. The user community must also develop both a deeper knowledge and appreciation of end-to-end business processes, and the core competency of structured and disciplined improvement. Otherwise technology is reduced to providing more useless information quicker - the old data rich, analysis poor syndrome. It is the equivalent of replacing the war rooms of manually prepared performance charts of the past, with digital dashboards that contain even

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more conflicting and non-actionable information. People, knowledge, and talent create the improvement side of technology-enabled improvement. The integrated enterprise architecture provides the technology side of technology-enabled improvement, and this combination also optimizes the value and ROI of enabling IT investments. In terms of Lean Six Sigma thinking, the interaction effects of technology plus improvement combined produce much greater benefits than treating the two as mutually exclusive. History clearly validates that organizations have tried one without the other for decades and it does not create sustainable best-in-class business processes. Enlightened Leadership Makes Technology Enabling We cannot discuss technology-enabled improvement without mention of the importance of a new leadership style and approach. Leadership is always the "hemi engine" that enables continuous and sustainable improvement. Leadership is also the reason why the word "continuous" keeps falling out of continuous improvement. A familiar saying in the continuous improvement arena is "the soft stuff is the tough stuff. The specific elements of improvement strategy, planning, and leading great transformations are often oversimplified or overlooked completely, and they are covered superficially at best in most books on improvement. All executives embrace the concepts of internalization and culture change, but many put little real commitment and effort into it because of its ambiguous and intangible nature. Consequently, cultures in organizations happen more by default than deliberate design, creating oscillating performance from improvement initiatives. This enlightened leadership role leads cultural transformation to become a definable process - with deliberate leadership behaviors, choices, and actions. Cultural transformation occurs when the right executive behaviors, choices, and actions are guiding this process. Enlightened leaders recognize the potential of technology-enabled improvement as a springboard into future success. They make the right investments in technology infrastructure and human capital to achieve new levels of greatness. Great organizations do not wake up one day and discover that they have a winning code of conduct and value system; their executives have deliberately created it with a higher moral purpose of improvement, deep passion and unwavering commitment, a bold plan, and the patience to play out their strategy over time. Continuous improvement is first and foremost, the only cultural standard of excellence, and a highly recognized and valued enabler of strategic and operating success. Furthermore, it is a never ending process of reinforcement and renewal. Improving how we improve cannot be accomplished with old thinking because too much is continuously changing the structure, processes, and social complexity of improvement. Summary For the most part, traditional improvement as we know it is a commodity especially in its concept state and its traditional manufacturing applications. More fads, meaningless academic and intellectual discussions, showboat demonstrations of improvement and "knowing how to" improve is not good enough in this challenging economy. There is a serious need to take continuous improvement to the next levels of superior performance, and we have the right formula for success to make this idea a reality with huge payoffs. Technology is the new game changer, but it will not make the permanent process of enlightened leadership any easier. It all begins with enlightened leadership that is committed to continuous improvement as first and foremost, the only acceptable cultural standard of excellence, and a critical enabler of strategy execution and business success. Technology-enabled improvement has widespread applications in industries less experienced with continuous improvement such as healthcare; federal, state, and local governments; municipalities and airlines; energy and utilities, and many other industries. Both of the topics discussed here improvement and technology are extremely complex and difficult to implement correctly, and even more difficult to grow the tangible benefits and sustain the continued progress of success. Emerging technology and major transformation in general has a learning curve, and I am confident that we will also figure out how to rebuild a stronger global economy through this next generation of technology-enabled continuous and innovative improvement.

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## Chapter 2 : Business process - Wikipedia

*Business model and technology innovations in the areas of "processes" and "process technologies" show the direct link between "process" and "innovation" and with that the importance of process management for innovation.*

No part of this publication may be reproduced stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the express and prior written permission of the STAI Sultan Abdurrahman. Edited and compiled by: Alpino Susanto and Hazriyanto Date: Faisal 62 International Conference on Character Education Website: Nationality, Universality and Challenges". It is to increase understanding and knowledge of concepts and practices of moral, values, citizenship and character education, and their application and development, national and universal. Promote and provide a forum for regional, national and global networking, collaboration and the exchange of ideas and perspectives in relation to character education through interdisciplinary and intercultural discussion. Disseminate research findings on character education approaches, projects and practices in various countries. Provide participants a glimpse of the practice of character education in Indonesia and other countries in South East Asia, and the challenges. We would like to express our sincere gratitude to all the authors who submitted contribution for inclusion. We hope that you will find this program interesting and thought-provoking and that the conference will provide you with a valuable opportunity to share ideas with other researchers and practitioners from institutions among the participants. Nationality, Universality, and Challenges The highlight of this even is to increase understanding and knowledge of concepts and practices of moral, values, citizenship and character education, and their application and development, national and universal. Provide participants a glimpse of the practice of character education. I incerely hope that everyone will play an active role in dicusing, disseminating and sharing their insights and experiences on International conference on Character Education. It gives me great pleasure to invite you to the 1st International Conference on Character Education which held on 23 August Education has been considered as the centre of excellence in preparing human s excellent characters. This belief drives every single person to be ready to face the global challenges. Now days, education is considered to be the best place to prepare the agent of change of the nation that will bring prosperous to others. Education institution is no longer a place to transfer knowledge only, but it is also a place to form youth s attitude, behaviour, character, and leadership. Thus, it is justifiable to reflect some basic value and character of one country and cultivate them to all young generation in the form of national character building through education. Different countries may have its own identity to build their nations character. The priority of the agenda for ndonesia s political sovereignty and independence in economy and culture. One of his nine priorities agenda is to revolutionize the nation s character through a policy of restructuring the national education curriculum with advanced civic education; to teach the history of the nation, the values of patriotism and to love the country, as well as to build the passion and character to defend the state through national education. We look forward to welcoming researchers, academics, practitioners, leaders, educators and policy makers from all parts of Indonesia, and Malaysia to participate on this event. We look forward to opening our doors to everyone to participate in the 1st ice This research intends to analyze how ICT competency directly influences knowledge management, how knowledge management directly influences innovation, and how ICT competency indirectly influences innovation through knowledge management. The research is limited to the case of the five sectors of the creative industries in the island of Batam, Indonesia. Those five sectors are television, radio, publishing, IT software and computer services, and architecture. The data are collected via questionnaire from a sample of respondents. A structural equation model is established to study the interrelationship among those variables. At the end, the research concludes that ICT competency has positive effect on knowledge management, as well as on innovation via knowledge management, and knowledge management mediates the relationship between ICT competency and innovation. It is not only for competitiveness but also to pursue long-term advantages [2,3]. Economists often cite innovation as a critical

element for growth [4]. Given the importance of innovation, researchers from a variety of disciplines have focused on the answers to the critical question: With the emergence of knowledge management and intellectual capital as new disciplines [], scientific articles are starting to appear that add these constructs to the long list of possible antecedents of innovation, e. Along with the increasing study of knowledge management, information technology IT has closely been associated with the development of the great majority of knowledge management initiatives [14]. Previously, a number of scientific articles has discussed the importance of ICT competency for knowledge management, and the importance of knowledge management for innovation []. However, it is remaining a question whether an indirect relationship exists between IT competency and innovation. In work, we intend to study the indirect effect of ICT competency on innovation. Firstly, we analyze the direct relationship between ICT competency and knowledge management, and then, analyzSe the direct relationship between knowledge management and innovation. Finally, we establish the indirect relationship between ICT competency and innovation. Various typologies of innovation have been discussed in the literature. For example, innovation can occur at various levels within an organization: Alternatively, innovations can range from radical to incremental or market-pull to technology-push. The distinction between incremental and radical innovation is important given the different effects each type of innovation is likely to have on an organization. Most innovations are incremental and will present themselves as either line extensions or modifications of existing products [19]. The ideas for these innovations are likely to come from the marketplace and so will be based on market research among current and potential customers and possibly also information about competitors and industry trends. Thus, incremental innovations are usually classified as market-pull innovations. By contrast, a radical innovation is likely to be competence destroying, often making existing skills and knowledge redundant [20]. Additionally, radical innovations often require different management practices [21]. These innovations are more likely to originate from scientists and so are classified as technology-push innovations [22]. Radical innovations often put the business at risk because they are more difficult to successfully commercialize. However, they are considered important for long-term success as they involve the development and application of new technology, some of which might change existing market structures [23]. Radical innovations are also likely to open up opportunities for follow-on incremental improvements [24]. Knowledge generation can be defined as the process by which the firm obtains knowledge, either from outside the company or generated internally [25,26]. The objective is to obtain new and better knowledge that helps the organization improve its competitiveness [27]. Thus, knowledge generation is not just about generating new contents, but also about replacing, validating and updating the firm s existing knowledge [ ]. Knowledge transfer refers to the process by which an organization shares knowledge among its units and members, promoting new understanding [27,28]. It is essential for the firm to develop an adequate design of informative interaction networks that allow individuals of diverse specialties, cultures, and geographic locations, not only to access the same information but also to come together through the network to undertake a particular project. Moreover, for the transfer of tacit knowledge, which requires more interaction between the individuals, the firm must develop mechanisms that encourage dialogue and interaction [29]. Finally, knowledge codification and storage is a very important aspect in the effective management of knowledge [30,31]. The existing knowledge must be captured, codified, presented and put in stores in a structured way, so it can be reused later [32]. It is found in different locations, in people s minds, in organizational processes, and in the corporate culture, embedded in different artifacts and procedures, and stored in different mediums such as print, disk and optical media [33]. While ICT is a generic term fundamentally used to refer to programs, computers and telecommunications, the term ICT competency is broader and refers to the use of these technologies to satisfy the firm s information needs [ ]. This study differentiates between three dimensions of this concept: Knowledge is information combined with experience, context, interpretation and reflection, so knowledge has a tacit component that is difficult to quantify [36]. Taylor [37] defines technical knowledge as the set of principles and techniques that are useful to bring about change toward desired ends. Thus, the current study defines IT knowledge as the extent to which the firm

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possesses a body of technical knowledge about elements such as computer systems. This concept refers to the IT-related methods, processes and techniques that may be needed if these technologies are to create value [38]. In the context of the current study, IT operations is defined as the extent to which the firm uses IT to improve its effectiveness and decision making. The IT infrastructure acts as an enabler, and to a large extent is responsible for the growing interest in the production and dissemination of information [39]. IT infrastructure refers to the artifacts, tools and resources that contribute to the acquisition, processing, storage, dissemination and use of information. According to this definition, the IT infrastructure includes elements such as hardware, software and support staff. Innovative efforts include the search for, and find, test, and development of new technologies, new products or services, new production procedures, and the new organizational structure. Innovation is about doing ideas [40]. Favorable Innovation procedure depends on the knowledge, particularly on tacit knowledge [41]. The new and valuable knowledge is created and turned into products, services and procedures [42], by converting general knowledge into specialized knowledge. In general, it can be affirmed, knowledge management, can affect the performance of the organization in a number of different ways [43]. Innovation is one of the main results of knowledge management. On the other side, ICT competency has become a central topic in the knowledge management s literature [ ]. If innovation is one of the main results of knowledge management and ICT competency has become a central topic in knowledge management, meaning there is indirect relationship only between the ICT competency to innovation. Based on the above facts, the hypothesis: IT competency has a positive effect on the knowledge management processes H2a. Knowledge management processes mediate the correlation between IT competency and innovation. This study focuses on five sub-sector of creative industry: For the model of Structural Equation Modeling SEM with a variable number of construct up to five, and each construct is described by three or more indicators, the number of sample data is considered adequate [45]. The number of samples based on the opinion of Hair, et. MLE will be effective on the number of samples between The number of samples can also be determined by per parameter [48]. In this study, there are three constructs with a total of 28 parameters. This scale was adapted from ref. Items about the firm s knowledge, skills and experience in the use of T measure the first of these dimensions. For the second dimension, the items measure the use of collaboration technologies, as well as the tools and systems available in the firm to acquire and store information that is useful in the decision making. Finally, to evaluate the firm s infrastructure, the scale includes items considering whether the firm develops software tailored to its own needs, the allocation of funds to acquire new equipment, or the existence of a person or department in charge of IT. Respondents were asked to indicate the level of agreement on each of the 11 items measuring various aspects of knowledge management processes including knowledge generation, knowledge transfer and sharing, and knowledge codification and storage. The scale was generated using some of the items from the scales proposed by [14]. The original [49,15] typology of innovation is used in this paper. Here, innovations are categorized as new to the world, new products to the firm, additions to existing product lines, improvements or revisions to existing product lines, cost reductions to existing products, or repositioning of existing products.

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## Chapter 3 : IT ENABLED BUSINESS PROCESS REENGINEERING | iaeme iaeme - calendrierdelascience

*Information technology (IT), in its myriad forms, is having a profound and palpable impact on IT users and their environments. Proposes and expounds on a framework of the roles of IT as an initiator, a facilitator, or an enabler.*

Practices from the past are not adequate for supporting the demands on business today. This tipping point will transform IT, pushing it to focus more directly on how the business operates. New technology helps IT develop complete and consistent designs for business processes, generate IT solutions quickly and govern data, rules, and usage. Using this technology makes it possible to create an IT organization that is no longer seen as an obstacle to meeting business demands and act as a full partner in achieving business success. A transformation will require IT to focus on two fundamental priorities: Transforming IT processes and practices so that IT becomes a business enabler, and Dealing with IT legacy applications that prevent IT from responding quickly to business demands. IT must focus on improving business operations instead of spending time and resources on application software and platforms. Consider how an IT project is initiated today. First, a need for the project is identified by a business unit or department. Then these business needs for IT support are prioritized. Projects are initiated and scheduled based on priorities and availability of IT resources. This new technology will provide IT with the ability to work shoulder-to-shoulder with business leaders to: Establishing the goals to be achieved is more than a target; it is a measure of success that will focus the effort on specific business goals. The need for operational adjustments is reflected in the periodic and often frequent revisions companies make to their organization charts as they try to manage their way to better results. IT can take the initiative in analyzing and improving business processes that affect the goals. The analysis needs to address all process actions, including manual actions, such as analyzing a report or approving a decision, as well as those that involve a computer. Technology that provides computer-aided capture of these elements allows IT to represent and, more importantly, validate operational business designs. Business designs need to be validated to ensure they contain complete and consistent specifications for software applications. Without this, IT cannot break free from the technical hodge-podge it must deal with today. IT must help analyze results and determine additional process adjustments that may be necessary to achieve the business goal. These may range from finding more process improvements to revising business direction. Once freed from the diverse technologies of the technology hodge-podge, IT can establish and enforce standards for business data, rules, processes, user interfaces, management, and all elements of business design. Expanding IT standards to business designs will allow IT to apply lessons learned from completed business designs and establish preferred business patterns. This is not simply a means to establishing a standard approach to business design; it can become the cornerstone of governance of processes, process actions, data, and rules rather than technical standards about technologies, software objects, and so forth. Also, including all actions performed in a process, not only computer-supported ones, provides a representation of the business, how it operates, and the way application software supports the business operation that will simplify operational and compliance audits. Mapping process actions to organization charts, business functions, strategy maps, and other management views will simplify examinations and verifications performed by internal and external auditors by providing them with documentation specifying how the business operates. Eliminating the cost of programming is the obvious cost reduction. Managing the costs of the data center is another. The ability to regenerate applications will allow IT to take advantage of new platforms and technologies. Eliminating application code as an obstacle to adopting new platforms and technologies will allow IT to reduce the resources required for platform management, application support, data center and network management, and disaster recovery. Technical innovations that affect IT continue with no end in sight. The ability to implement them simply? An IT department committed to adding business value in these ways will make IT an enabler of the business rather than the obstacle it is considered to be today. However, how can IT transform itself when it is confronted with the legacy applications that consume so much time and resources today? Dealing with Legacy

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IT Applications IT needs to leave behind the hodge-podge that has been built up over decades and its accumulated technical complexity. This requires setting a point in time when everything about defining and delivering IT solutions will change. But how does an IT department that is focused on business design work with all the applications and investments in place today? It will be necessary for computer-generated applications to coexist and interact with existing applications through files and messages. However, there are challenges that need to be faced: Commercial applications are positioned by vendors that sell them to be proprietary. These applications create their own information silos that present data issues and integration challenges. They are important for supporting core business operations and may be complex and difficult to replace and, in many cases, to use. It will be necessary for computer-generated applications to interact with these commercial applications using messages and files. But, just as a mall has anchor stores, these products are cornerstones of the IT hodge-podge. Add to that the IT staff needed to support the product, and ongoing costs are not inconsequential. Over time, it will be possible to replace licensed products with cheaper, computer-generated custom applications unique to your business. Until then, purchased applications will continue supporting silos of business processing and data. Legacy custom and homegrown applications: Legacy applications are important for supporting business operations and can also be complex and difficult to replace. These applications are important for supporting business operations and present data issues and integration challenges as well. Replacing legacy applications with cheaper, custom computer-generated applications that meet business needs will be easier than replacing purchased applications. These silos of business processing and data can be easily replaced when they require new or changed functionality. However, there is a related challenge: Rules are invisible because they are buried in millions of lines of code, in thousands of programs, in hundreds of application systems, in dozens of programming languages. Extracting these rules, rationalizing them, and standardizing them and the data they use present a huge, but necessary, challenge for every IT organization. Meeting this challenge is necessary because the risk inherent in relying on unknown rules is not a long-term solution. Identifying business rules and making them visible, understanding how, when, and where they are applied, and managing them separate from application software is essential for effectively developing and managing business designs. Business intelligence BI , master data, and data management solutions: All data management solutions exist because of the problems associated with application silos of business processing and data. If there were no data problems, there would be no need for, or discussion of, data quality, master data, data warehouses, and other data management solutions. It will be essential that a technology that generates a business application eliminates the problems that come from silos of business processing and data. In other words, the technology must enforce software engineering principles including SPOT single point of truth so that every piece of knowledge in all computer-generated applications has a single, unambiguous, authoritative representation within a system. This is pertinent to data and processing so there is no redundancy in data or processing of business rules. This unified approach allows attention to be focused on data values and processing rules rather than application programs. There are powerful forces in technology that are making a single unified application with a single database possible. One driving force is massively parallel processing for storing data on disks. While commercially available for decades, these MPP options are under pressure to lower their costs now that open source and lower-cost alternatives are available. The second force is replacing disk-based data storage with in-memory databases. IT will be able to focus on business processes, the user interface they need, and the data and rules that support them. The goal is to replace shadow IT with self service so that users have no need to create separate data and processing rules but can use unified application rules and data to create their own reports, queries, and analytic models from the data and rules it contains. Overcoming these challenges is essential if IT is to focus completely on the business, how it operates, the data it uses, the business rules it applies, and the user interface to digital information. The way business application software has been created has not changed significantly since computers were introduced into the business. There was a period from roughly to where computer-aided software engineering CASE tools were available. What is needed is automation of IT. It is time for IT to

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automate its activities to improve IT effectiveness like automation has been applied to business activities to improve operational effectiveness. Without doing this IT will continue being an obstacle to rapidly moving businesses. The time to begin the transformation of IT into a full, effective, and valuable partner helping achieve business goals by delivering solutions at the speed the business needs is now. His professional focus is on the strategic application of information technology to improving operational performance, managing organizational and technical change, and optimizing business effectiveness. He can be reached via email at Richard. Be sure to visit today!

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## Chapter 4 : Process Excellence Network | Technology: Enabler or inhibitor of improvement?

*Information Technology as an Enabler of Knowledge Management: An Empirical Analysis Bhatt (), knowledge management is a process of knowledge creation.*

Enterprises wanting to increase their market share or obtain profits must adapt to changes in the environment. Consequently, many changes in business methods are beginning to appear. One of them is business process reengineering BPR, defined as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance. All of them imply the same concept that focuses on integrating both business process redesign and deployment of information technologies IT to support the reengineering work. The main objective of this paper is to present the impacts of information technology IT in business process renovation. They found out that the implementation of modern information technology in organizations means not only automation of managerial and production tasks but that it also has a direct effect on the quality of the work done. It is argued by some researchers that there is no commonly agreed definition of BPR. However, the book *Reengineering the Corporation: The following is their definition of BPR: Michael Hammer is the primary originator and leading expert of the concept of business reengineering and the founder of the reengineering movement. This point was further discussed and developed by Hammer in his "Reengineering Work: BPR simply means transformation from function based to process based. The radical redesign of a process is easily achieved by involving information technology IT in business processes and hence the prominence of IT in BPR. There exists a curvilinear relationship between BPR and IT which can be utilized for thorough process change. In the modern times and due to rapid proliferation of computers in the business arena, BPR through IT is getting a big boost. BPR using IT emanated from gradual progression in the use of computers from routine clerical job processing to IT-based decision making. Many corporations reaped benefits by re-engineering their processes at various stages of IT development. At the same time, re-engineering cannot be planned and achieved in small cautious steps for any corporation Hammer, In this era driven by fierce competition, companies endeavour to shorten cycle time and improve quality and customer services by adopting newer-process oriented techniques like BPR. Business re-engineering or radical BPR is to reshape the entire organization. Revisionist BPR is to focus on smaller scope of change under a process management framework. Some of the prominent studies relating roles of IT in BPR for organizations and challenges on organizations when implementing the BPR are mentioned below: Their research proposed a framework for facilitating business process reengineering efforts towards competitive organizations. The framework was tested using data from a sample of chief information officers or senior information systems managers, each of whom completed a survey. The survey results indicated that organizational innovation, market pressure and competitive intensity positively affect information technology adoption, which in turn trigger changes in business process in terms of workplace, workforce and business structure. It has focused on the concept that, although BPR improves the efficiency of processes, it can hardly be applied in its own and thus it needs to be complemented with other concepts from other disciplines. Information technology IT tools are seen as accurate and effective enablers of BPR approach in restructuring activities. Their paper focused on analyzing how IT can be an enabler of BPR approach to restructuring processes in an organization for the purpose of enhancing the effectiveness and efficiency of processes. The moderating effects of industry type, and information intensity of the firm are also analyzed. Data for the study were gathered through a survey of Fortune US firms at divisional levels. Out of 1,000 questionnaires mailed to Fortune firm-divisions, responses were received. Out of firm-divisions 73 firm-divisions were found to be adopting BPR techniques; 39 firm-divisions were found to be adopting incremental improvement approaches. The rest of the responses were incomplete and could not be used. For data analysis, therefore, only 73 firm-divisions were considered. The results of the study support the hypotheses that network infrastructure affects the dimensions of BPR process improvement thrust, and*

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customer focus, but data integration was not found to be significantly affecting the BPR dimensions. The moderating effect of industry type was found to be significantly affecting the relationship between network infrastructure and BPR dimensions. Other relationships were not found to be significant. His work has demonstrated the importance of IT in one of the most prominent methodologies. He has concluded that Enterprises can make their tasks easier, redesign their organization, change the way they work, and achieve spectacular improvement using, among other enablers, IT. The authors also suggested further research studies in case-based studies implementations and analysis. By undertaking an empirical study, Bernroider et al. On the contrary, ERP success decreases if a project team is dominated by business unit. BPR aims at enhancing customer service by improving productivity, eliminating waste and reducing the cost. The driver for BPR is to realize dramatic improvements by fundamentally rethinking how an organization work should be done instead of mere process improvement that focus on functional or incremental improvement. In this sense, reengineering without an IT support is nearly impossible. The evolution of IT provides multiple options for process execution that were not possible erstwhile, which opened the possibility of reengineering in first phase. Hammer considers it to be the key implementation of BPR. He says the use of IT is to challenge the assumptions inherent in the work processes that have existed since before the advent of modern computer and communications technology. He argues that at the heart of reengineering is the idea of discontinuous thinking. Discontinuous thinking is a way to recognize and break away from the outdated rules and fundamental assumptions that underlie operations. Usually, these rules are based on assumptions about technology, people, and organizational goals that no longer exist. Hammer suggests the following principles of reengineering: IT should be viewed as more than an automating or mechanizing force but rather as a way to fundamentally reshape the way business is done. Many researchers and practitioners have increasingly considered factors related to IT infrastructure as a vital component of successful BPR efforts. Effective alignment of IT infrastructure and BPR strategy, building an effective IT infrastructure, adequate IT infrastructure investment decision, adequate measurement of IT infrastructure effectiveness, proper IS integration, effective reengineering of legacy IS, increasing IT function competency, and effective use of software tools are a few of the most important factors that contribute to the success of BPR projects. The business strategy should be clear and detailed. Top management should act as a strategy formulator who provides commitment for the whole process of redesign, while the IS manager should be responsible for designing and implementing the IS strategy. The strategy describes the role of IT in leveraging changes to business processes and infrastructures. IT strategic alignment is approached through the process of integration between business strategy and IT strategy, as well as between IT infrastructure and organizational infrastructure. The degree of alignment between the BPR strategy and the IT infrastructure strategy is indicated by including the identification of information resource needs in the BPR strategy, deriving the IT infrastructure strategy from the business strategy, examining the IT infrastructure strategy against the BPR strategy, the active involvement of management in the process of IT infrastructure planning and IT managers in business planning, and by the degree of synchronization in formulating the two strategies. Figure 1 shows the multidimensional nature of BPR. Multidimensional View of BPR Light, Business activities should be viewed as more than a collection of individual or even functional tasks. They should be viewed as a way to achieve maximum effectiveness. IT and BPR have recursive relationships. IT capabilities should support business processes and business processes should be implemented in terms of the capabilities IT can provide. Business processes represent a new approach to coordination across an organization. They define the Degree of Mediation of the process as the extent of sequential flow of input and output among participating functions. They define the Degree of Collaboration of the process as the extent of information exchange and mutual adjustment among functions when participating in the same process. In this framework, information technology is critical in reducing the Degree of Mediation and enhancing the Degree of Collaboration. Also, innovative uses of IT would inevitably lead many firms to develop new structures, enabling them to coordinate their activities in ways that were not possible before. The IS group may need to play a behind-the-scenes advocacy role,

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convincing senior management of the power offered by IT and process redesign. It would also need to incorporate the skills of process measurement, analysis, and redesign. IT enabled BPR ensures achieving larger targets, reducing risk and providing measures in sustaining results over a long time. An adequate understanding of technologies for redesigning business processes is necessary for proper selection of IT platforms. Effective overall system architecture, flexible IT infrastructure and proper installation of IT components all contribute to building an effective IT infrastructure for business processes. The IT infrastructure and BPR are interdependent in the sense that deciding the information requirements for the new business processes determines the IT infrastructure. Building a responsive IT infrastructure is highly dependent on an appropriate determination of business process information needs. This, in turn, is determined by the types of activities within a business process, and the sequencing and reliance on other organizational processes. An effective IT infrastructure follows a top-down approach, beginning with business strategy and IS strategy and passing through designs of data, systems and computer architecture. Linkages between the IT infrastructure components are important for ensuring integrity and consistency among the IT infrastructure components. IT standards also have a major role in reconciling various infrastructure components to provide shared IT services that are of a certain degree of effectiveness to support business process applications. The IT infrastructure shared services and the human IT infrastructure components, in terms of their responsibilities and their expertise, are both vital to the process of the IT infrastructure composition. However BPR has not really worked as its proponents expected. Davenport and Short attribute this problem to a lack of understanding of the deeper issues of IT. Properly implementing IT can improve the competitive position of organizations. But inappropriately implementing IT may create barriers to responding to the rapidly changing business environment. Further, simply picking IT packages cannot achieve successful BPR if it is simply used to speed up the process rather than reengineer it. As Davenport contends: IT can continuously reflect and reinforce bureaucratic and functional structures or IT can help to create a leaner, flatter and more responsive organization. For example, IT tools that are designed for functional hierarchies are primarily designed to support incremental improvements and cannot achieve the radical change in BPR projects. While information systems provide fast processing and response, they often fail to provide the flexibility for human communication, which can lead to serious consequences. This means IT may sometimes have a negative impact by merely automating the existing processes. IT is the enabler to reengineer processes and is an important driving force for business transformation. ERP systems allow sharing of real-time information between manufacturers, customers, and business partners. Outsourcing systems or employing consulting firms during planning and implementation stages rarely works due to conflicting views that cannot be accepted internally by the enterprise personnel. Moreover, there is a limit to which consulting firms can be involved in internal decision-making process of the enterprise. Use of internet is acceptable from the point of view of increased productivity, better communication, and cost reduction. Security and support are just a few IT concerns in such cases. Intranet provide sophisticated security, than internet, as it is local only to the enterprise.

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## Chapter 5 : How to Make IT a Business Enabler by Richard Skirletz - BeyeNETWORK

*The nature of process innovation: Selecting processes for innovation: Information technology as an enabler of process innovation: Processes and information.*

Overview[ edit ] A business process begins with a mission objective an external event and ends with achievement of the business objective of providing a result that provides customer value. Additionally, a process may be divided into subprocesses process decomposition , the particular inner functions of the process. Business processes may also have a process owner, a responsible party for ensuring the process runs smoothly from start to finish. Operational processes, which constitute the core business and create the primary value stream, e. Operational processes, which focus on properly executing the operational tasks of an entity; this is where personnel "get the things done" Management processes, which ensure that the operational processes are conducted appropriately; this is where managers "ensure efficient and effective work processes" Governance processes, which ensure the entity is operating in full compliance with necessary legal regulations, guidelines, and shareholder expectations; this is where executives ensure the "rules and guidelines for business success" are followed A complex business process may be decomposed into several subprocesses, which have their own attributes but also contribute to achieving the overall goal of the business. Processes can be modeled through a large number of methods and techniques. For instance, the Business Process Modeling Notation is a business process modeling technique that can be used for drawing business processes in a visualized workflow. In the end, all processes are part of a largely unified outcome, one of "customer value creation. Previously, in a society where production was dominated by handcrafted goods , one man would perform all the activities required during the production process, while Smith described how the work was divided into a set of simple tasks, which would be performed by specialized workers. The appropriate level of task division was defined through experimental design of the production process. Following his ideas, the division of labor was adopted widely, while the integration of tasks into a functional, or cross-functional, process was not considered as an alternative option until much later. His Principles of Scientific Management focused on standardization of processes, systematic training and clearly defining the roles of management and employees. Peter Drucker[ edit ] In the latter part of the twentieth century, management guru Peter Drucker focused much of his work on simplification and decentralization of processes, which led to the concept of outsourcing. A process is thus a specific ordering of work activities across time and space, with a beginning and an end, and clearly defined inputs and outputs: Processes are the structure by which an organization does what is necessary to produce value for its customers. These characteristics are achieved by a focus on the business logic of the process how work is done , instead of taking a product perspective what is done. They define a process as: We call these primary processes. Other processes produce products that are invisible to the external customer but essential to the effective management of the business. We call these support processes. According to Rummler and Brache, a typical characteristic of a successful process-based organization is the absence of secondary activities in the primary value flow that is created in the customer oriented primary processes. The characteristic of processes as spanning the white space on the organization chart indicates that processes are embedded in some form of organizational structure. Also, a process can be cross-functional, i. Ideally, the transformation that occurs in the process should add value to the input and create an output that is more useful and effective to the recipient either upstream or downstream. Summarizing the four definitions above, we can compile the following list of characteristics for a business process: It must have clearly defined boundaries, input and output. It must consist of activities that are ordered according to their position in time and space a sequence. The transformation taking place within the process must add value to the recipient, either upstream or downstream. A process cannot exist in itself, it must be embedded in an organizational structure. A process regularly can, but not necessarily must, span several functions. Frequently, identifying a process owner , i. Sometimes the process owner is the same person who is performing the process. Workflow[

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edit ] Workflow is the procedural movement of information, material, and tasks from one participant to another. A single workflow may either be sequential, with each step contingent upon completion of the previous one, or parallel, with multiple steps occurring simultaneously. Multiple combinations of single workflows may be connected to achieve a resulting overall process. It consisted of starting from a blank slate and completely recreating major business processes as well as the use of information technology for significant performance improvement. The term unfortunately became associated with corporate "downsizing" in the mids. Knowledge management[ edit ] Knowledge management is the definition of the knowledge that employees and systems use to perform their functions and maintaining it in a format that can be accessed by others. These assets may include databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers. It was followed by the Six Sigma methodology in the mids, first introduced by Motorola. Six Sigma consists of statistical methods to improve business processes and thus reduce defects in outputs. The "lean approach" to quality management was introduced by the Toyota Motor Company in the s and focused on customer needs and reduction of wastage. In the s, operating systems had limited functionality, and any workflow management systems that were in use were tailor-made for the specific organization. The ss saw the development of data-driven approaches, as data storage and retrieval technologies improved. Data modeling rather than process modeling was the starting point for building an information system. Business processes had to adapt to information technology because process modeling was neglected. The shift towards process-oriented management occurred in the s. Cloud-based technologies allow companies to purchase resources quickly and as required independent of their location. Social media, websites and smart phones are the newest channels through which organizations reach and support their customers. The abundance of customer data collected through these channels as well as through call center interactions, emails, voice calls, and customer surveys has led to a huge growth in data analytics which in turn is utilized for performance management and improving the ways in which the company services its customers. Each process has one or more needed inputs. The inputs and outputs may be received from, or sent to other business processes, other organizational units , or internal or external stakeholders. In general, the various tasks of a business process can be performed in one of two ways [1]: In other words, the data and information that are being handled through the process may pass through manual or computer tasks in any given order. There is a cascading effect of improvements made at a higher level on those made at a lower level. Reporting as an essential base for execution[ edit ] Business processes must include up-to-date and accurate reports to ensure effective action. There are numerous examples of this in every possible business process. Another example from production is the process of analysis of line rejections occurring on the shop floor. This process should include systematic periodical analysis of rejections by reason, and present the results in a suitable information report that pinpoints the major reasons, and trends in these reasons, for management to take corrective actions to control rejections and keep them within acceptable limits. Such a process of analysis and summarisation of line rejection events is clearly superior to a process which merely inquires into each individual rejection as it occurs. Business process owners and operatives should realise that process improvement often occurs with introduction of appropriate transaction, operational, highlight, exception or M. With this understanding would hopefully come the willingness to invest time and other resources in business process improvement by introduction of useful and relevant reporting systems. Supporting theories and concepts[ edit ] Span of control[ edit ] The span of control is the number of subordinates a supervisor manages within a structural organization. Introducing a business process concept has a considerable impact on the structural elements of the organization and thus also on the span of control. Information management concepts[ edit ] Information management , and the organization infrastructure strategies related to it, are a theoretical cornerstone of the business process concept, requiring "a framework for measuring the level of IT support for business processes.

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## Chapter 6 : CEMEX: Information Technology, an Enabler for Building the Future

*Many process and innovation methods contain a phase where you are supposed to evaluate how you can utilize existing technology to do your business in a more clever way. The challenge with this kind of approach is that we are already limiting our thought patterns to what is possible.*

But in order to reap the rewards, organizations need to move beyond the limits of their current business models, says contributor Janne Ohtonen. Instead, they must look to what they should be doing rather than just improving on what they already do. We are quite used to running our businesses based on what existing technology enables us to make happen. For instance, today, technological innovations like internet-enabled mobile devices have allowed businesses to innovate new ways of doing things that were previously unthinkable. But in many cases, we do not innovate enough – we need to start thinking about what kind of technology we actually should have in order to get the outcome we are seeking. Technology has opened up new ways of working - but are we innovating enough? Many process and innovation methods contain a phase where you are supposed to evaluate how you can utilize existing technology to do your business in a more clever way. The challenge with this kind of approach is that we are already limiting our thought patterns to what is possible. How would you do it? Just imagine that for a second before reading further! Maybe you were thinking about setting up some kind of web based system such as a form or email to send the files over to be printed. But is there something more innovative that could be done to do that? We will get back to this a bit later in this article. The best practices offered by these types of technological solutions are only useful for a short period of time, because it is easy for competitors to start using the same technology and to copy the business model. For that very reason, technology is not a good driver for business and you should look into next practices that bring more value. Actually, it should be that the business and - even more importantly - the customer experience is what will dictate what the technology must be able to achieve. We would not have landed on the moon fifty years ago, if we were to use the airplanes that existed at the time, would we? Technology can improve traditional businesses, if used as a proper enabler. For instance, several years ago photocopy shops in the United States were confronted with a major problem: The rise of powerful personal computing devices meant that people were able to print, scan, and copy from the comfort of their own homes. To solve that problem FedEx joined forces with Kinko and came up with another kind of solution. The FedEx Office Printer is a simple application that operates much like the other printer drivers on your computer. Once installed, you will be able to send your files to print with FedEx Office Print Online in just a couple of clicks. Using this streamlined printing option, you can have your documents prepared at the FedEx Office location of your choice and ready for pickup, shipment via FedEx or local delivery. It is like having your own in-house print centre. But how did they use technological advancements to promote their process innovation? The classical technological advancement for a copy shop is to get faster, cheaper and better copy machines. Therefore, the business development is about finding better locations for the shop and improving the marketing to make it easy for people to find that specific shop. Process innovation focuses on eliminating waste in producing the prints and improving the in-store customer service. What FedEx Office has done is looked beyond that classical paradigm. They may have asked: So, instead of finding technological solutions to improve their processes from a traditional perspective, they redesigned the whole way of running a copy shop business. That opened a whole new world of process innovation to them and that is why today they also offer cloud printing. From a customer perspective, the copy shop has moved from the High Street to their personal computer. From a business perspective FedEx has been able to create a new business model, which is harder for competitors to copy. The technology innovation was to create a new kind of printer driver. Of course some ideas are not technologically possible at the moment, but that does not mean that we should not consider them. For that reason a famous elevator company is one of the main investors into a teleportation technology. Even though at the moment we can only move state of atoms from one place to another with laser beams, it does not

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mean that we could not do more in near future. And if you are part of that development, you will have very strong lead on your competitors. Customer strategy should be the most important driver of your business strategy, which should drive the process strategy, which, in turn, should be supported by the technology. What you can do is to think, how technology should be used in your organization to enable better customer experiences. I am sure that in most organizations there are lots of benefits to be gained just by using the existing technology in more intelligent way. Moreover, if your organization has technology in use that is not useful, get rid of it. That will free up resources for using technological advancements to support process innovation. Here are some reflective questions for you to ask regarding technology strategy: Is customer strategy driving your technology strategy or other way around? How should you use technology to do better business? Does the business plan of the organization also take the information systems into consideration? Does the organization extensively use information systems? How could you make more efficient communication channels for transferring information? Should existing information systems be reengineered to support customer experience better? But what do you think? Let us know by leaving a comment!